

Claims

1. An estrogen receptor gene comprising a nucleotide sequence coding for any of the following amino acid sequences (a) to (f):

(a) the amino acid sequence of SEQ ID NO: 1,

(b) the amino acid sequence of SEQ ID NO: 4,

(c) the amino acid sequence of SEQ ID NO: 23,

(d) an amino acid sequence exhibiting 95% or more amino acid identity to the amino acid sequence of SEQ ID NO: 1,

(e) an amino acid sequence exhibiting 95% or more amino acid identity to the amino acid sequence of SEQ ID NO: 4, and

(f) an amino acid sequence exhibiting 85% or more amino acid identity to the amino acid sequence of SEQ ID NO: 23.

2. An estrogen receptor gene comprising any of the following nucleotide sequences (g) to (i):

(g) the nucleotide sequence represented by nucleotide numbers 424 to 1941 of SEQ ID NO: 2,

(h) the nucleotide sequence represented by nucleotide numbers 74 to 1819 of SEQ ID NO: 5, and

(i) the nucleotide sequence represented by nucleotide numbers 106 to 1767 of SEQ ID NO: 24.

3. A vector comprising the estrogen receptor gene according to claim 1.

4. The vector according to claim 3, wherein a promoter operably linked to the estrogen receptor gene.

5. The vector according to claim 3, wherein the vector is a virus.

6. A viral particle containing the vector according to claim 5.

7. A method for producing a vector, comprising a step of incorporating the estrogen receptor gene according to claim 1 into a vector replicable in a host cell.

8. A transformant, wherein the estrogen receptor gene according to claim 1 is introduced into a host cell.

9. A transformant, wherein the vector according to claim 3 is introduced into a host cell.

10. The transformant according to claim 8, wherein said estrogen receptor gene is introduced into a chromosome

of said host cell.

11. The transformant according to claim 8, wherein said host cell is an animal cell.

12. The transformant according to claim 8, wherein said host cell is a mammal cell.

13. The transformant according to claim 8, wherein said host cell is an insect cell.

14. The transformant according to claim 8, wherein said host cell is a yeast cell.

15. A method for producing a transformant, comprising a step of introducing the estrogen receptor gene according to claim 1 into a host cell.

16. A method for manufacturing an estrogen receptor, comprising a step of culturing the transformant according to claim 8 and a step of producing estrogen receptor.

17. A DNA, comprising a partial nucleotide sequence of the estrogen receptor gene according to claim 1.

18. The DNA according to claim 17, wherein said partial nucleotide sequence is a nucleotide sequence coding for a ligand binding domain of the estrogen receptor.

19. An estrogen receptor, comprising any of the following amino acid sequences (a) to (f):

- (a) the amino acid sequence of SEQ ID NO: 1,
- (b) the amino acid sequence of SEQ ID NO: 4,
- (c) the amino acid sequence of SEQ ID NO: 23,
- (d) an amino acid sequence exhibiting 95% or more amino acid identity to the amino acid sequence of SEQ ID NO: 1,
- (e) an amino acid sequence exhibiting 95% or more amino acid identity to the amino acid sequence of SEQ ID NO: 4, and
- (f) an amino acid sequence exhibiting 85% or more amino acid identity to the amino acid sequence of SEQ ID NO: 23.

20. A method for evaluating the ability of a test substance to regulate estrogen receptor activity, comprising a step of:
bringing the test substance into contact with a transformant, wherein a reporter gene linked downstream of a transcriptional control region including an estrogen

response element sequence and the estrogen receptor gene according to claim 1 are introduced into said transformant, and measuring an expression amount of said reporter gene in said transformant.

21. A receptor binding assay, comprising a step of: bringing a test substance into contact with the estrogen receptor according to claim 19 and incubating.

22. Use of the estrogen receptor gene according to claim 1 for measuring the ability of a test substance to regulate estrogen receptor activity in a two-hybrid system, wherein ligand-dependent formation of a complex comprising: an estrogen receptor and a transcription coupling factor capable of ligand-dependently binding to the estrogen receptor or receptor binding domain of said transcription coupling factor; results in activation of transcription of a reporter gene.

23. Use of DNA according to claim 17 for measuring the ability of a test substance to regulate estrogen receptor activity in a two-hybrid system, wherein ligand-dependent formation of a complex comprising:

an estrogen receptor and
a transcription coupling factor capable of ligand-
dependently binding to the estrogen receptor or receptor
binding domain of said transcription coupling factor;
results in activation of transcription of a reporter gene.